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To: MLPAComments@resources.ca.gov; raynor@ci.monterey.ca.us
Cc: MLPA@yahoogroups.com; Marc Shargel; Kaitilin Gaffney; Christy Semmens
Subject: MLPAComments: Breakwater Fish Species Biodiversity

Package 2 of the Central Coast Regional Stakeholders Group (CCRSG) recommends that the north side of the Monterey Breakwater (also known as the Monterey Coast Guard Pier) be included in a no-take State Marine Reserve.

Strong reasons for Marine Reserve status include the intense recreational use of this area by SCUBA divers (it's the most popular dive site on the west coast of North America), and removing the danger to divers being hooked by a small group of pier fishermen (in documented cases between Jan - Sept 2005, a diver was hooked on average every 19 days). Sea lions and harbor seals in the area have also been observed with hooks embedded in various parts of their bodies.

One lesser-known reason for including the Breakwater in a State Marine Reserve is the unusually high fish species biodiversity in this small area. The combination of deeply fissured rocky reef, kelp canopy and adjacent sandy bottom, and the confluence of the northern and southern California fish species, all contribute to this fish species diversity. Volunteer recreational divers for the Reef Environmental Education Foundation (REEF) have conducted over 8,500 surveys of fish species at hundreds of dive sites along the west coast. The greatest species richness reported by REEF along the entire west coast occurs at the Monterey Breakwater (see <http://www.reef.org/stats.htm>). Attached is a composite list of 97 fish species observed at the Breakwater by REEF divers, and by Dan Gotshall, retired marine biologist for the California Department of Fish and Game and the author of the book Pacific Coast Inshore Fishes.

The Breakwater has also played a historic role in marine biology. The Masked Prickleback Eel was unknown to science until the 1960s when it was discovered at the Breakwater by David Powell, the former Director of Live Exhibit Development at the Monterey Bay Aquarium.

In summary, the Breakwater is a unique marine habitat with tremendous species biodiversity, and deserves Marine Reserve protection.

Respectfully submitted,

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Fishes Observed at the Monterey Breakwater and Surrounding Soft Bottoms by Dan Gotshall, 1962-2004, and by 246 REEF surveys, 1997-2005

	<u>Common Name, Scientific Name</u>	<u>Observed by..</u>	<u>Comments</u>
1	Spotted rat fish, <i>Hydrolagus coliei</i>	Gotshall	
2	Thornback, <i>Platyrrhinoidis triseriata</i>	Gotshall REEF	
3	Bat ray, <i>Myliobatis californica</i>	Gotshall REEF	
4	Pacific electric ray, <i>Torpedo californica</i>	Gotshall REEF	
5	Green sturgeon, <i>Acipenser medirostris</i>	Gotshall	Wolfe has also seen at nearby Metridium Fields
6	California lizardfish, <i>Synodus lucioceps</i>	Gotshall	
7	Spotted cusk-eel, <i>Chilara taylori</i>	Gotshall REEF	
8	Red brotula, <i>Brosomphycis marginata</i>	Gotshall REEF	
9	Plainfin midshipman, <i>Porichthys notatus</i>	Gotshall REEF	
10	Kelp clingfish, <i>Rimicola muscarum</i>	Gotshall REEF	
11	Tubesnout, <i>Aulorhynchus flavidus</i>	Gotshall REEF	
12	Bay pipefish, <i>Sygnathus leptorhynchus</i>	Gotshall REEF	
13	Bocaccio, <i>Sebastes paucispinis</i> *	Gotshall REEF	
14	Black rockfish, <i>Sebastes melanops</i> *	Gotshall REEF	
15	Blue rockfish, <i>Sebastes mystinus</i> *	Gotshall REEF	
16	Yellowtail rockfish, <i>Sebastes flavidus</i> *	Gotshall REEF	
17	Olive rockfish, <i>Sebastes serranoides</i> *	Gotshall REEF	
18	Canary rockfish, <i>Sebastes pinniger</i> *	Gotshall REEF	
19	Vermilion rockfish, <i>Sebastes miniatus</i> *	Gotshall REEF	
20	Kelp rockfish, <i>Sebastes atrovirens</i> *	Gotshall REEF	
21	Grass rockfish, <i>Sebastes rastrelliger</i>	Gotshall REEF	
22	Brown rockfish, <i>Sebastes auriculatus</i> *	Gotshall REEF	
23	China rockfish, <i>Sebastes nebulosus</i> *	Gotshall REEF	
24	Black and yellow rockfish, <i>Sebastes chrysomelas</i> *	Gotshall REEF	
25	Gopher rockfish, <i>Sebastes carnatus</i> *	Gotshall REEF	
26	Copper rockfish, <i>Sebastes carnatus</i> *	Gotshall REEF	
27	Halfbanded rockfish, <i>Sebastes semicinctus</i> *	Gotshall	Juveniles also reported by Tom Laidig (NOAA biologist)
28	Stripetail rockfish, <i>Sebastes saxicola</i> *	Gotshall	Juveniles also reported by Tom Laidig (NOAA biologist)
29	Treefish, <i>Sebastes serriceps</i>	Gotshall REEF	
30	Kelp greenling, <i>Hexagrammos decagrammus</i>	Gotshall REEF	
31	Rock greenling, <i>Hexagrammos superciliosus</i>	Gotshall REEF	
32	Painted greenling, <i>Oxylebius pictus</i>	Gotshall REEF	
33	Lingcod, <i>Ophiodon elongatus</i> *	Gotshall REEF	
34	Coralline sculpin, <i>Artedius corallinus</i>	Gotshall REEF	
35	Red Irish lord, <i>Hemilepidotus hemilepidotus</i>	Gotshall REEF	
36	Brown Irish lord, <i>Hemilepidotus spinosus</i>	Gotshall REEF	
37	Pacific staghorn sculpin, <i>Leptocottus armatus</i>	Gotshall REEF	
38	Sailfin sculpin, <i>Nautichthys oculoasciatus</i>	Gotshall REEF	
39	Snubnose sculpin, <i>Orthonopias triacis</i>	Gotshall REEF	
40	Cabezon, <i>Scorpaenichthys marmoratus</i> *	Gotshall REEF	

41	Manacled sculpin, <i>Synchirus gilli</i>	Gotshall	
42	Pygmy poacher, <i>Odontopyxis trispinosa</i>	Gotshall	REEF
43	Snailfish, <i>Liparis sp.</i>	Gotshall	
44	Kelp bass, <i>Paralabrax clathratus</i>	Gotshall	REEF
45	Ocean whitefish, <i>Caulolatilus princeps</i>	Gotshall	
46	Opaleye, <i>Girella nigricans</i>	Gotshall	REEF
47	Halfmoon, <i>Medialuna californiensis</i>	Gotshall	REEF
48	Kelp surfperch, <i>Brachyistius frenatus</i>	Gotshall	REEF
49	Shiner surfperch, <i>Cymatogaster aggregata</i>	Gotshall	REEF
50	Pile surfperch, <i>Damalichthy vacca</i> *	Gotshall	REEF
51	Black surfperch, <i>Embiotoca jacksoni</i> *	Gotshall	REEF
52	Striped surfperch, <i>Embiotoca lateralis</i> *	Gotshall	REEF
53	Rainbow surfperch, <i>Hypsurus caryi</i>	Gotshall	REEF
54	Sharpnose surfperch, <i>Phanerodon atripes</i>	Gotshall	REEF
55	White surfperch, <i>Phanerodon furcatus</i>	Gotshall	REEF
56	Rubberlip surfperch, <i>Rhacochilus toxotes</i>	Gotshall	REEF
57	Walleye surfperch, <i>Hyperprosopon argenteum</i>	Gotshall	
58	Blacksmith, <i>Chromis punctipinnis</i>	Gotshall	REEF
59	Senorita, <i>Oxyjulis californica</i>	Gotshall	REEF
60	California sheephead, <i>Semicossyphus pulcher</i> *	Gotshall	REEF
61	Stripefin ronquil, <i>Rathbunnella alleni</i>	Gotshall	REEF <i>R. hypoplecta</i> ?
62	Monkeyface prickelback, <i>Cebidichthys violaceus</i>	Gotshall	REEF
63	Penpoint gunnel, <i>Apodichthys flavidus</i>	Gotshall	
64	Kelp gunnel, <i>Ulvicola sanctacrosae</i>	Gotshall	
65	Masked prickelback, <i>Ernogrammus walkeri</i>	Gotshall	REEF
66	Wolf-eel, <i>Anarrhichthys ocellatus</i> *	Gotshall	REEF
67	Sarcastic fringehead, <i>Neoclinus blanchardi</i>	Gotshall	
68	One-spot fringehead, <i>Neoclinus uninotatus</i>	Gotshall	
69	Crevice Kelpfish, <i>Gibbonsia montereyensis</i>	Gotshall	REEF <i>Gibbonsia sp. is typically Crevice Kelpfish, Gibbonsia montereyensis</i>
70	Blackeye goby, <i>Coryphopterus nicholsii</i>	Gotshall	REEF
71	Bluebanded goby, <i>Lythrypnus dalli</i>	Gotshall	REEF Eschemeyer et al report northern limit is Morro Bay, but reliable sightings made during El Nino years
72	Bay goby, <i>Lepidogobius lepidus</i>	Gotshall	REEF Rectangular blotches similar to night phase coloration of black-eye gobies, verified by opalescent cheek patch in black-eyed gobies.
73	Pacific sanddab, <i>Citharichthys sordidus</i>	Gotshall	REEF
74	Speckled sanddab, <i>Citharichthys stigmaeus</i> *	Gotshall	REEF
75	Starry flounder, <i>Platichthys stellatus</i>	Gotshall	REEF
76	C-O turbot, <i>Pleuronichthys coenosus</i> *	Gotshall	REEF
77	Hornyhead turbot, <i>Pleuronichthys verticalis</i> *	Gotshall	REEF
78	Curlfin turbot, <i>Pleuronichthys decurrens</i>	Gotshall	REEF
79	Sand sole, <i>Psettichthys melanostictus</i>	Gotshall	REEF
80	California tonguefish, <i>Symphurus atricauda</i>	Gotshall	
81	Common mola, <i>Mola mola</i>	Gotshall	REEF
82	Striped Kelpfish, <i>Gibbonsia metzi</i>		REEF Distinguished by larger size than Crevice Kelpfish, even soft fin spacing at posterior end of dorsal fin.
83	Giant Kelpfish, <i>Heterostichus rostratus</i>	Gotshall	REEF
84	Reef Surfperch, <i>Micrometrus aurora</i>		REEF
85	Barred Sand Bass, <i>Paralabrax nebulifer</i>		REEF Eschemeyer et al report northern limit is Santa Cruz

86	Round Stingray, <i>Urolophus halleri</i>	REEF	Eschemeyer et al report northern limit is Eureka
87	Diamond Turbot, <i>Hypsopsetta guttulata</i>	REEF	Eschemeyer et al report northern limit is Cape Mendocino
88	California Halibut, <i>Paralichthys californicus</i>	REEF	
89	Northern Anchovy, <i>Engraulis mordax</i>	REEF	
90	Zebra Goby, <i>Lythrypnus zebra</i>	REEF	Eschemeyer et al report northern limit is Carmel Bay; Gotshall remembers reliable reports at Breakwater during El Nino
91	Sablefish, <i>Anoplopoma fimbria</i> *	REEF	Adults deeper than 1,000 feet, individual seen was subadult
92	Jackmackerel, <i>Trachurus symmetricus</i>	REEF	
93	Pacific Sardine, <i>Sardinops sagax</i>	REEF	
94	Swell Shark, <i>Cephaloscyllium ventriosum</i>	REEF	Eschemeyer et al report northern limit is Monterey Bay
95	Rock Sole, <i>lepidopsetta bilineata</i>	REEF	Eschemeyer et al report southern limit is Tanner Bank (s. calif.)
96	Northern Clingfish, <i>Gobiesox maeandricus</i>	REEF	
97	Giant Sea Bass, <i>Stereolepis gigas</i>	REEF	Spotted by Alan Dower, a very experienced and reliable REEF fish surveyor, having made 144 fish counts as of August 2005. Verified as possible by Dan Gotshall, who remembers sightings from the 1950s and 1960s.
	* Juveniles		